

A CLUSTER WITH MULTIPLE PATHS BETWEEN HOSTS AND I/O CONTROLLERS
RAJESH R. SHAH

FILING DATE: 11-29-99 ATTORNEY DOCKET No. 42P7719

1/11

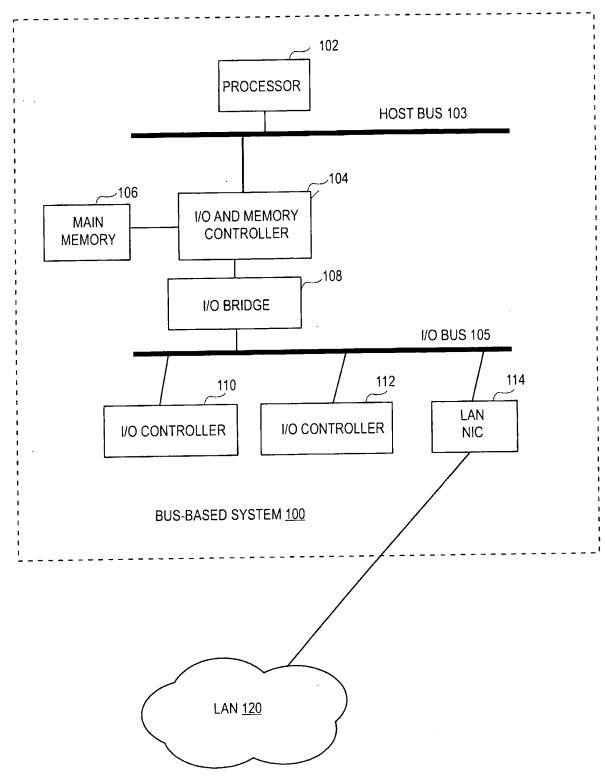
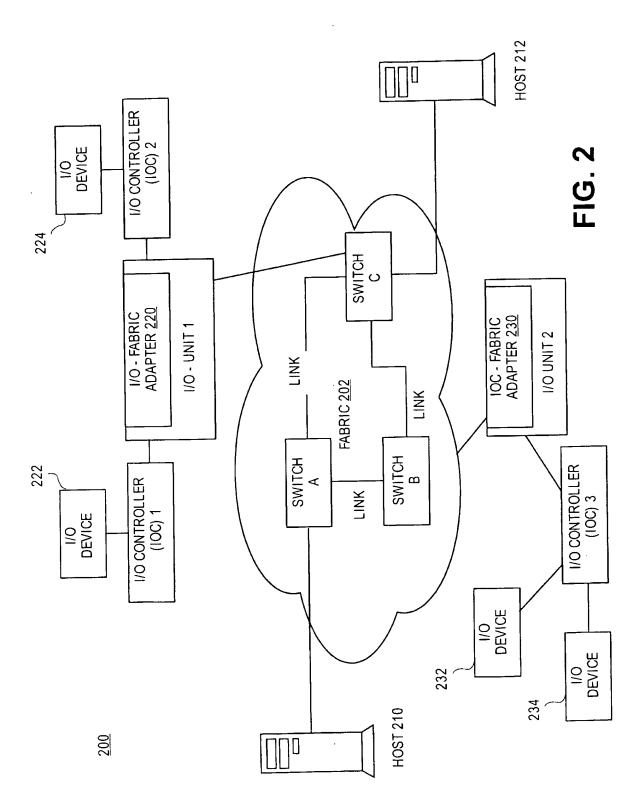
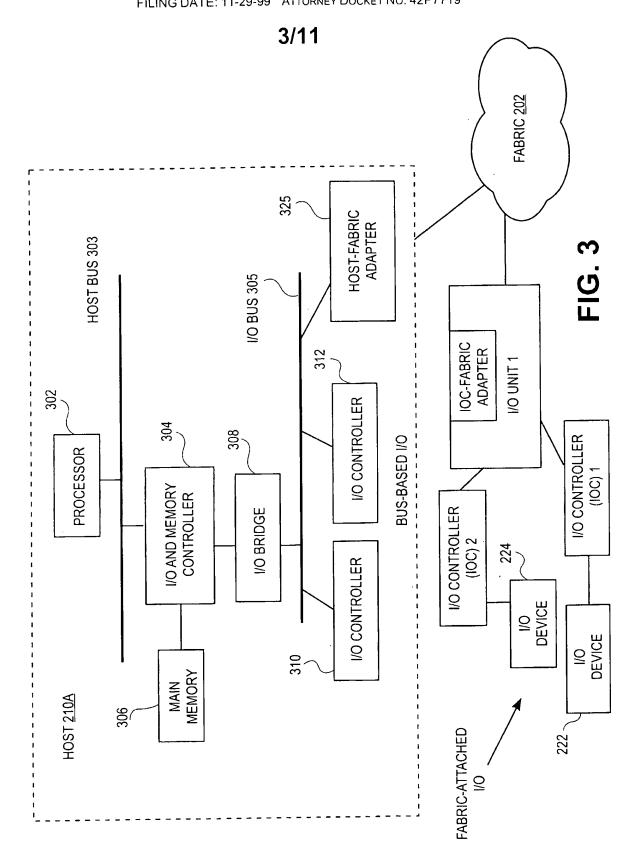


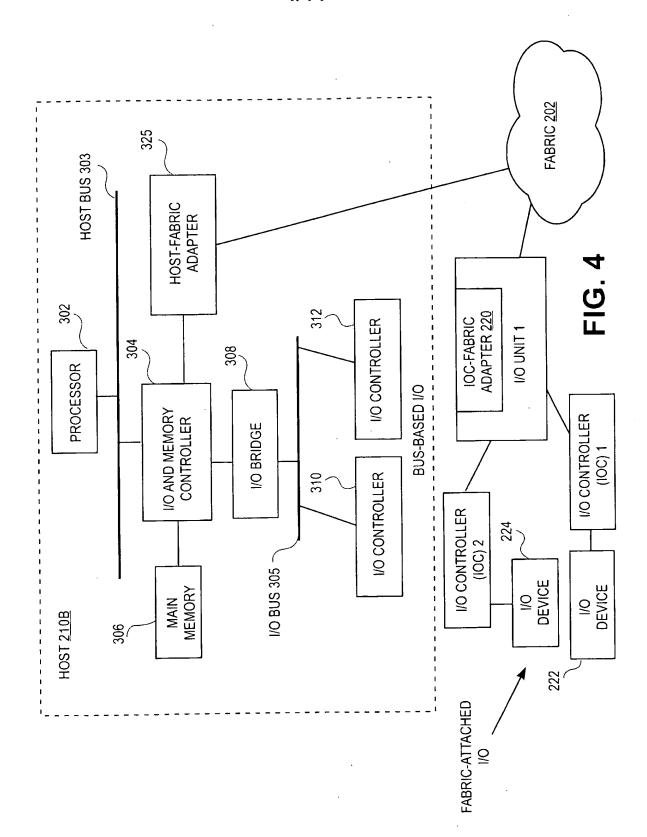
FIG. 1

2/11



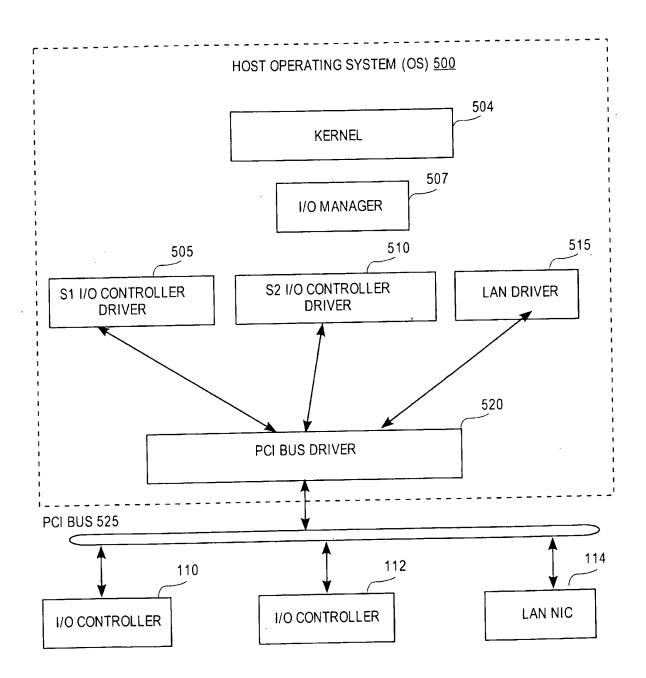


4/11



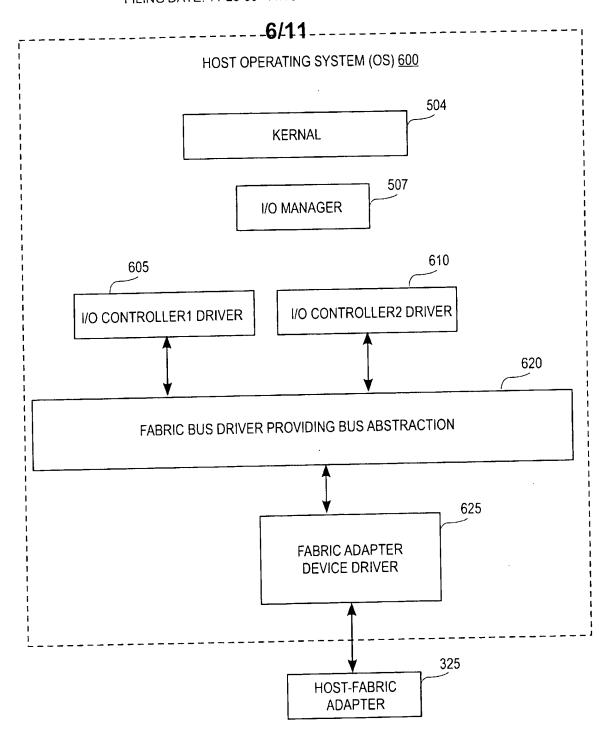
FILING DATE: 11-29-99 ATTORNEY DOCKET No. 42P7719

5/11



EXAMPLE SOFTWARE DRIVER STACKS FOR HOST HAVING BUS-BASED I/O

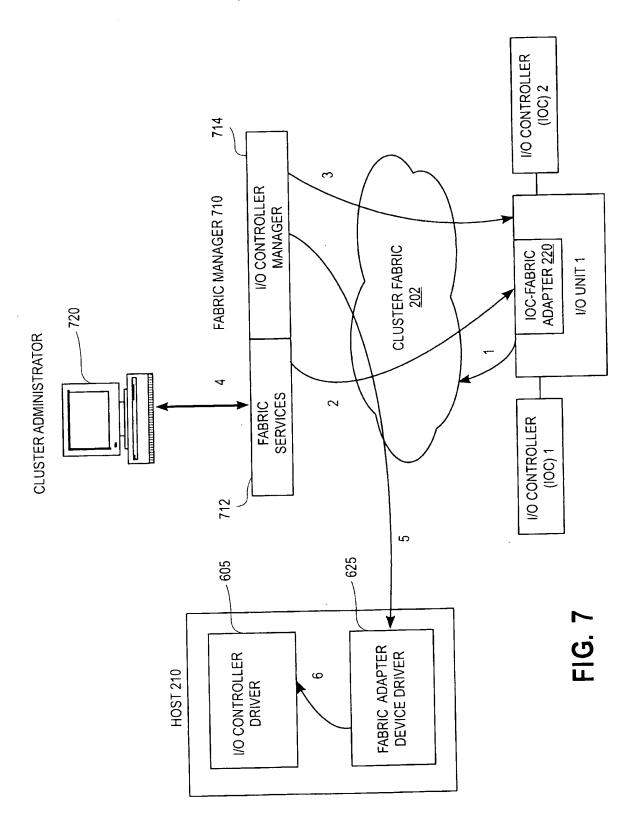
FIG. 5



EXAMPLE SOFTWARE DRIVER STACKS FOR HOST HAVING FABRIC-ATTACHED I/O

FIG. 6

7/11



8/11 200 ල 1/0 UNIT 2 <u>ල</u> 4 15 HOST-FABRIC ADAPTER FABRIC BUS DRIVER 4 FABRIC ADAPTER DEVICE DRIVER 13 12 4 HOST 212 9 10 က 730 **ADMINISTRATOR** FABRIC ADAPTER 4 CLUSTER FABRIC 202 FABRIC MGR 31 30 630 (PORT 1) 10C 1 CONTROLLER DEVICE DRIVER STACK 620 625 10C 1 (PORT 3) HOST-FABRIC ADAPTER FABRIC ADAPTER DEVICE DRIVER FABRIC BUS DRIVER ∞ 10C 1 (PORT 7) ဖ S 632 1/0 UNIT 1 FAB #4 (PORT 4) CONNECTION MANAGER 8 HOST-HOST FAB #4 (PORT 6) HOST 210

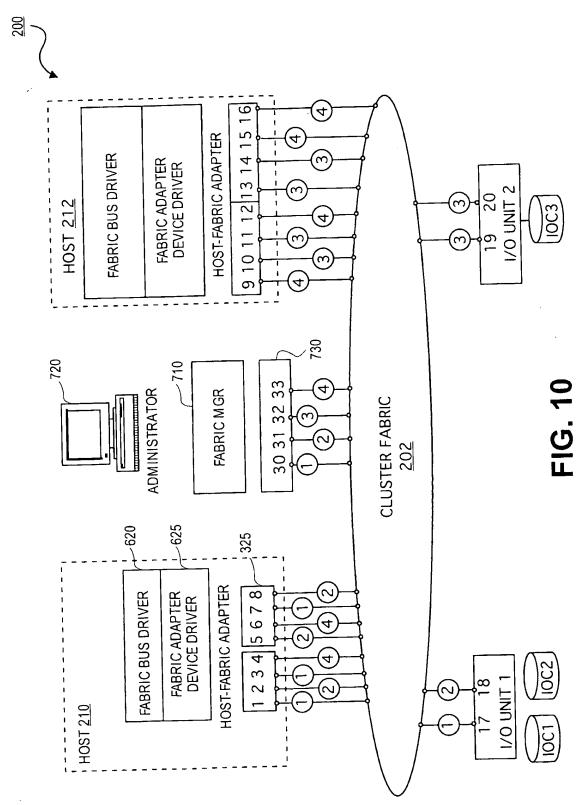
A CLUSTER WITH MULTIPLE PATHS BETWEEN HOSTS AND I/O CONTROLLERS RAJESH R. SHAH FILING DATE: 11-20-99 ATTORNEY DOCKET NO. 42P7719

FILING DATE: 11-29-99 ATTORNEY DOCKET No. 42P7719 9/11 910 LOAD KERNEL INTO MAIN MEMORY 920 LOAD I/O MANAGER INTO MAIN MEMORY 930 LOAD I/O BUS DRIVERS INTO MAIN MEMORY (INCLUDING FABRIC MANAGER) I/O MANAGER QUERIES EACH BUS DRIVER (LOCAL 940 I/O BUS DRIVERS AND FABRIC MANAGER) TO IDENTIFY ANY CONNECTED I/O CONTROLLERS EACH BUS DRIVER IDENTIFIES CONNECTED I/O CONTROLLERS: 1) EACH LOCAL I/O BUS DRIVER IDENTIFIES I/O CONTROLLERS 950 CONNECTED TO LOCAL I/O BUS 2) FABRIC BUS DRIVER IDENTIFIES FABRIC-ATTACHED I/O CONTROLLERS ASSIGNED TO HOST 3) FABRIC BUS DRIVER IDENTIFIES ALL PATHS TO TARGET I/O CONTROLLER 960 FABRIC BUS DRIVER CREATES ONE INSTANCE OF I/O CONTROLLER DRIVER STACK FOR EACH PATH TO TARGET I/O CONTROLLER 970 I/O MANAGER LOADS ONE INSTANCE OF I/O CONTROLLER DEVICE DRIVER FOR EACH INSTANCE REPORTED BY FABRIC BUS DRIVER

FIG. 9

FILING DATE: 11-29-99 ATTORNEY DOCKET NO. 42P7719

10/11



FILING DATE: 11-29-99 ATTORNEY DOCKET NO. 42P7719

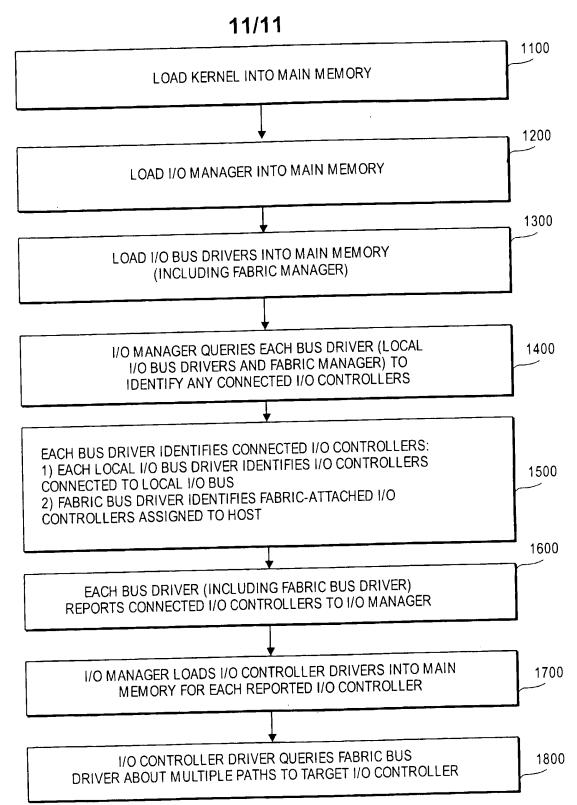


FIG. 11